

BS

1. (Amended) Ophthalmic lens comprising a substrate made of organic glass, of an abrasion-resistant coating, of a layer of impact-resistant primer and of an anti-reflective coating, wherein the surface of the substrate is covered with the abrasion-resistant coating and in that the impact-resistant primer layer is inserted between the abrasion-resistant layer and the anti-reflective coating, and wherein the abrasion-resistant coating is a silicone based coating or an acrylic based coating.

2. Lens according to claim 1, wherein the substrate is chosen from
(I) the glasses obtained by polymerization of diethylene glycol bis(allyl carbonate);
(II) the glasses obtained by polymerization of acrylic monomers derived from bisphenol A;
(III) the glasses obtained by polymerization of allyl monomers derived from bisphenol A.

3. Lens according to claim 1, wherein the substrate is chosen from:
(A) the glasses obtained from poly(methyl methacrylate);
(B) the glasses obtained from polystyrene resin;
(C) the glasses made of resin based on diallyl phthalate.

4. Lens according to claim 1, wherein the impact-resistant interlayer has an intrinsic Bayer value lower than or equal to 2, at a thickness of 3 μm .

5. Lens according to claim 1, wherein the impact-resistant primer is a thermoplastic or heat-curable polymer composition which has a solids content ranging from 5 to 20% by weight relative to the total weight of the primer composition.

6. Lens according to claim 1, wherein the thickness of the impact-resistant interlayer in the cured state is between 0.2 and 1 μm .

7. Lens according to claim 1, wherein the composition of the impact-resistant primer consists of a thermoplastic polyurethane resin obtained by reaction of a diisocyanate with a compound comprising a reactive hydrogen at each end.

8. Lens according to claim 1, wherein the composition of the impact-resistant primer consists of a heat-curable polyurethane resin obtained by reaction of a blocked polyisocyanate and of a polyol.

9. Lens according to claim 1, wherein the composition of the impact-resistant primer consists of a copolymer of acrylic and/or methacrylic monomers and of aromatic vinyl compounds.

10. Lens according to claim 1, wherein the composition of the impact-resistant primer consists of a polysiloxane.

11. Lens according to claim 10, wherein the composition of the impact-resistant primer contains in a solvent medium, one or a number of silane hydrolysate(s) with an epoxy group containing at least one Si-alkyl group and containing no fillers.

12. Lens according to claim 1, wherein the hard abrasion-resistant coating is obtained by curing a composition containing:

- a) colloidal silica which has a mean particle diameter of between 1 and 100 nm;
- b) a solvent;
- c) a hydrolysate or a mixture of hydrolysates of silane compound(s) of formula:



in which:

R¹ demotes an organic group containing an epoxy group;

R² is a hydrocarbon radical which has 1 or 2 carbon atoms;

R³ is a hydrocarbon group which has from 1 to 4 carbon atoms, and a is 0 or 1 in value.

13. Lens according to claim 1, wherein the thickness of the abrasion-resistant layer, in the cured state, is between 1 and 15 μm.

14. (Amended) Lens according to claim 12, wherein the composition of the abrasive-resistant coating has a colloidal silica content of between 0 and 40% by weight in the solids content.

15. Lens according to claim 1, wherein the anti-reflective coating consists of a mono- or multiplayer film based on dielectric materials and deposited by vacuum deposition.

16. Lens according to claim 1, successively including:

- a) a substrate made of glass obtained by polymerization of diethylene glycol bis(allyl carbonate);
- b) a hard abrasion-resistant coating obtained by curing a composition containing, in methanol, colloidal silica and a hydrolysate of γ-glycidyloxypropylmethyldiethoxysilane;

- c) an impact-resistant interlayer obtained by curing a composition containing, in methanol, a hydrolysate of γ -glycidyloxypropylmethyldiethoxysilane or of γ -glycidoxypropyltrimethoxysilane;
- d) a multiplayer anti-reflective coating.
-

17. (Amended) Lens according to claim 1, successively including:

- a) a substrate made of glass obtained by polymerization of diethylene glycol bis (allyl carbonate);
- b) an abrasion-resistant coating obtained by curing a composition containing, in methanol, colloidal silica and a hydrolysate of γ -glycidoxypropylmethyldiethoxysilane;
- c) an impact-resistant interlayer obtained by curing a composition containing 4,4'-dicyclohexylmethane diisocyanate and polyethylene glycol;
- d) a multiplayer anti-reflective coating.
-

18. Process for the manufacture of an ophthalmic lens as defined in claim 1, comprising:

- applying the abrasion-resistant coating onto the surface of the organic glass substrate;
- depositing the layer of impact-resistant primer is deposited onto the abrasion-resistant layer; and
- depositing the anti-reflective coating is onto the impact-resistant primer.

19. Process according to claim 18, wherein the abrasion-resistant layer and the layer of impact-resistant primer are deposited by centrifuging, by dipping or by spraying and in that the anti-reflective coating is applied by vacuum deposition or sol-gel deposition.

20. Process according to claim 18, wherein the abrasion-resistant and impact-resistant primer layers are pretreated using a surface activation treatment by a chemical or physical route.

21. Process according to claim 20, wherein the surface activation treatment is an alkaline chemical etching, an oxygen plasma treatment or an ion bombardment in a vacuum vessel.

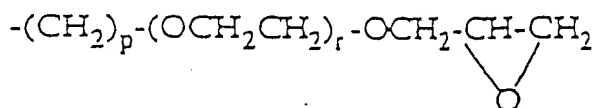
Please add the following additional claims.

22. (New) Lens according to claim 1, wherein the abrasion-resistant coating contains one or more mineral fillers for increasing the hardness or the refractive index or both of the abrasion-resistant coating.

23. (New) Lens according to claim 2, wherein the mineral fillers are selected from the group consisting of silicone, titanium dioxide, antimony oxide and mixed oxides.

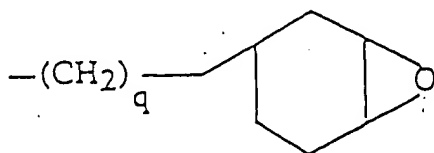
24. (New) Lens according to claim 1, wherein the silicone based abrasion-resistant coating is an epoxysilane hydrolysate based coating.

25. (New) Lens according to claim 12, wherein R¹ is an organic group containing an epoxy group of formula:



where p is 1 to 6 and r is 0 to 2.

26. (New) Lens according to claim 12, wherein R¹ is an organic group containing an epoxy group of formula:



where q is 1 to 6.